molecules of the bullet and of the target. The transactions seem clear enough so long as they are [c] exchanges ' of ' motion ' or momentum. The suddenly formed mass of hot gases confined in the small space thrusts the bullet in one direction, the rifle in another; and the pressure of the gas is a matter of a multitude of impacts of its molecules against bullet and rifle. The impact of the billiard ball on another is the prototype of all such [6] transmission ' of kinetic energy. In reality, the one ball, A^ ceases to move forward, and the other, B_y begins to move in the same direction. A has lost energy or power of doing work; and the other, B, has gained an equal amount; but it is not that a quantity of some concrete reality has passed over from A to B.

What really happens when the gunpowder explodes we do not know, because we do not know how to conceive latent power of doing work. We know that its atoms become sorted out into different molecular aggregations; and we say that the atoms of the molecules which existed before the explosion had strong unsatisfied affinities for others in the mixture; and that in the sorting out these affinities become satisfied or more nearly satisfied than before. It is a striking fact that even in these days chemists and physicists continue to use this anthropomorphic language in regard to chemical affinities, the latent form of chemical energy. The fact points again to the historical truth that all our thinking of energy and force is rooted in and based upon our own experiences of striving, of desires (or impulses) satisfied

and unsatisfied, of causing changes by putting forth effort, and of resisting the efforts of other beings like ourselves. It was the deepest ground of the popularity of the mechanical world-view that it pretended to describe all